UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

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Distr.
LIMITED

E/ECA/NRD/E/22
25 November 1984

ENGLISH

Original: ENGLISH

ECONOMIC COMMISSION FOR AFRICA

Regional Workshop on Energy Planning

Addis-Ababa, Ethiopia 3-7 December 1984

LC/NAIROB

ENERGY PLANNING IN THE GAMBIA

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NOVEMBER 1984

I. INTRODUCTION

In a global context, the factor, ENERGY reached a crisis point in the early seventies when oil producing countries shot up the prices of crude oil. The direct consequence of this is a very steep rise in production costs. From this point on the various countries of the world, at different levels of economic development and factor endowments began the process of adjustments to this reality. This adjustment entails:

(a) Increasing the efficiency of energy use through rational pricing, the use of incentives and various demand management measures;

(b) undertaking an expanded and more diversified programme of investments to develop indigenous energy resources which will be cheaper than imported energy;

(c) reorienting industrial, agricultural and transport development strategies to take account of the higher costs of energy inputs; and

(d) strengthening institutional and management capabilities in the energy sector to design and carry out these tasks effectively.

These measures are particularly difficult for the oil importing developing countries, such as The Gambia, who must raise the finance for them while continuing to pay for oil imports until the measures are completed and the necessary investments mature.

In the case of The Gambia petroleum products do not constitute the major share of the total energy needs but are an important energy input in the operations of public utilities (water and electricity), the small industrial sector, the transport and communications sector and to a lesser degree the agricultural sector. The bulk of the population, particularly the rural majority continue to derive a large proportion of their energy consumption needs from fuelwood and the use of animal traction. However this alternative source of energy is faced with the serious problem of depletion through overexploitation, bushfires and increased farming and grazing. This situation makes the petroleum-associated energy crisis assume greater dimensions.

Energy demand comes from two main subsectors: traditional and commercial. About 75 per cent of total firewood consumption is by rural households, and the remaining 25 per cent by urban households. Almost all petroleum products are used in electricity generation and in the transport sector. Table 1 has the breakdown by sector for 1980.

Table 1. Consumption of oil products by sector (1980)

Sector	Consumption (m^3)
Agriculture	3,730
Industry	7,430
Public Utilities	9,180
Transport	31,920
Domestic/Tertiary	7,230
Total	59,490

Source: Second Five Year Plan, P. 126.

The Gambia's energy endowment is modest. The country is very flat with a maximum elevation of 40 metres above sea level, which precludes major hydroelectric potential. However, sub-regional co-operation within the context of OMVG (The Development of The Gambia River Basin) open up opportunities for hydroelectric power from dams to be constructed on upper parts of The Gambia River Basin. There also exists some energy potential for wind, solar and biomass but these are presently grossly under exploited. Exploitation of these renewable sources of energy demand huge financial outlays which The Gambia can hardly afford in the absence of external financing.

II. BROAD POLICY FRAMEWORK FOR ENERGY PLANNING

A. THE CONSTRAINTS

As indicated earlier on, the fundamental energy constraints facing The Gambia are:

1. Increasing oil import bills and their attendant crippling effect on national balance of payments;

2. deforestration - limiting the scope of fuelwood resources and the introduction of desert-like conditions;

3. financial constraint - restricting the research and development of the alternative renewable sources of energy;

4. the relatively small quantities required by The Gambia creates a supply problem. Suppliers are usually nor attracted by small orders and furthermore The Gambia does not enjoy the benefits of economics of scale.

In addition to the above main problems there are also other limitations such as manpower constraints, inadequate investment and insufficient co-ordination and planning among relevant government agencies, and paucity of basic data.

As an initial planning step to resolve these problems, an Energy Survey and Master Plan was drawn. This has defined an investment programme for resource development, energy conservation, pricing and taxation.

B. DEVELOPMENT OBJECTIVES

The Gambia's Second Five Year Plan 1981/82 - 1985/86 states the following objectives for the energy sector:

1. To achieve efficient and judicious consumption of energy;

2. to provide adequate and secure domestic and imported energy supplies for present and projected needs;

3. to minimize the cost of energy to the economy, through reducing energy imports and increasing efficiency of investment;

4. to ensure that the above objectives are met in an environmentally acceptable fashion.

C. DEVELOPMENT STRATEGY

Pursuant to the above objectives, the Plan also put forward the following strategy:

1. To encourage conservation by domestic, commercial, and institutional consumers;

2. to accelerate feasibility studies for the development of renewable energy resources;

3. to continue exploration for oil and other fossil fuels;

4. to reduce the unit cost of electricity production by using heavy fuel oil and upgrading the transmission system;

5. to provide limited expansion of generating capacity in the rural areas;

6. to introduce solar water heaters into households, hotels, and factories using large amounts of low temperature heat;

7. to promote use of energy saving vehicles, through appropriate fiscal policies and government regulations.

III. THE PLANNING PROCESS - INSTITUTIONAL ASPECTS

As the apex of the various institutions concerned with energy is the National Energy Commission (NEC) chaired by the Honourable Minister of Economic Planning and Industrial Development with other members comprising senior executives and experts from the public and private sectors. The Commission will be the principal advisory body to the Cabinet on energy issues.

An Energy Planning Unit (EPU) has been established within the Ministry of Economic Planning and Industrial Development to serve as the Secretariat of the NEC. This unit is charged with the responsibility of preparing detailed policies and programmes on energy development and conservation within the framework of the long-term Energy Master Plan and the National Development Objectives. The unit is also expected to build up a sound data base for energy planning. In order to ensure the successful implementation of energy policies and programmes, an evaluation and monitoring system within the EPU is devised. It focuses on energy conservation, pricing and resource exploitation.

The Ministry of Economic Planning collaborates with relevant ministries and departments in formulating a publicity programme on energy matters to encourage conservation of energy.

IV. PROJECTS AND PROGRAMMES

Training: An energy training programme is vigorously pursued for personnel in energy-related agencies, particularly the Gambia Utilities Corporation.

Forestry: A number of forestry development programmes, covering research, institutional strengthening and afforestation, are currently being implemented within the framework of the Second Plan.

Energy conservation: The Gambia Public Transport Corporation will always endeavour to use more fuel efficient buses. The feasibility of operating minibuses for intercity transportation is subject to further consideration. New and improved fuelwood cooking stoves continue to be produced and research into further improvement in the efficiency of these stoves is in progress.

Renewable energy resources: Assistance has been obtained from the Regional Centre for Solar Energy (CRES), Bamako, Mali, for the establishment of a national centre for renewable energy (RE) in The Gambia. This centre will carry out research and limited production within the field of RE. The Gambia Technical Training Institute is being considered as a possible candidate for such a centre. The Departments of Water Resources and Community Development are carrying out some research in RE and have implemented or are implementing projects and programmes concerning solar water heaters, solar fish driers, solar pumps, wind pumps and biomass production but on a very limited scale.

Pricing Policy: As stated in Second National Development Plan, the pricing policy will be used to achieve development objectives and to complement other measures. Prices of petroleum products will be reviewed periodically, keeping in view international prices and the revenue and balance of payments of The Gambia.

V. CONCLUSION

To some extent The Gambia can attain the laudable objectives set in the Development Plan for the energy sector with proper and effective planning, implementation and monitoring. There will be limitations. The various constraints identified will reduce the capacity of attaining the national goals and objectives. Furthermore, it ought to be realised that The Gambia is a small country within a much wider community of nations and that the subject of energy is very closely related to the phenomenon of environment. Environmental factors do not respect political boundaries. Therefore, for a more effective control over our energy resources, the planning, implementation and monitoring will, of necessity, transcend the national level and extend to both the regional and inter-regional levels.

OIL PRODUCTS IMPORTS RELATIVE TO TOTAL IMPORTS AND DOMESTIC EXPORTS, 1974/75 - 1979/80

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80
Total imports (million Dalasi)	88.3	144.3	159.8	208.1	221.0	290.4
Imports of petroleum products (million Dalasi)	7.9	9.1	11.3	19.4	21.0	26.2
Petroleum imports as a percentage of total imports	8.9	6.3	7.7	9.3	9.5	9.0
Total domestic exports (Million Dalasi)	83.4	75.0	104.6	74.4	69.4	64.8
Percentage by which petroleum imports exceed total domestic exports	9.5	12.1	10.8	28.1	30.3	40.4

Source: Second Five Year Plan, I. 129.